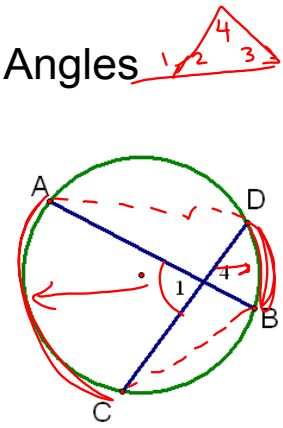
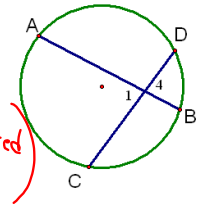
10-6 Other Angles

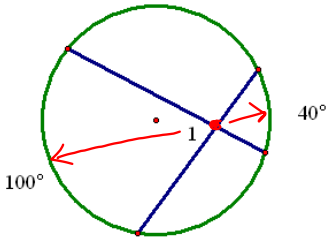


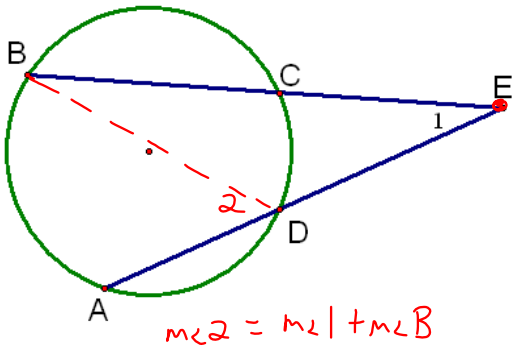
Theorem 10-12--The measure of an angle formed on the inside of a circle (by 2 secants or 2 chords) is half the sum of the measures of the intercepted arcs.



gsp

Find the measure of the angle.

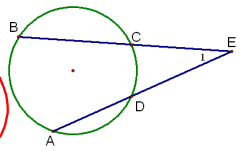




Theorem 10-14--The measure of an angle formed on the outside of a circle (by 2 secants, 2 tangents, or secant and a tangent) is half the difference of the measures of the intercepted arcs.

$m\angle 1 = \frac{1}{2}(m\overset{\frown}{BA} - m\overset{\frown}{CD})$

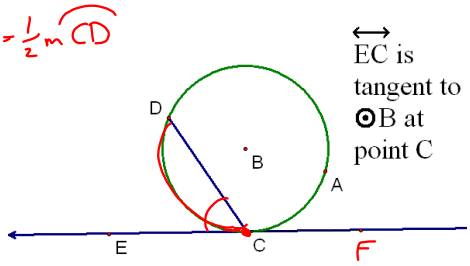
outside $\angle$ = ½(difference of intercepted arcs)



gsp

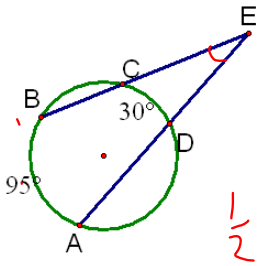
Theorem 10-13--An angle formed by a secant and a tangent at the point of tangency = ½ intercepted arc (chord)

$m\angle DCE = \frac{1}{2}m\overset{\frown}{CD}$



$\overleftrightarrow{EC}$ is tangent to ⊙B at point C

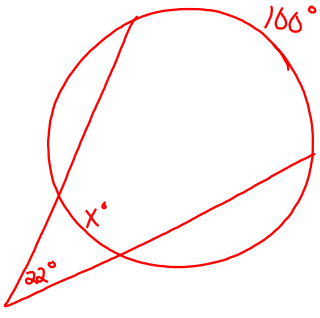
$m\angle DCF = \frac{1}{2}m\overset{\frown}{CAD}$



$m\angle E =$ 32.5°

$\frac{1}{2}(95-30)$

65

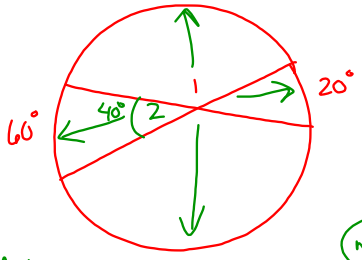


$22 = \frac{1}{2}(100 - x)$

$44 = 100 - x$

$-56 = -x$

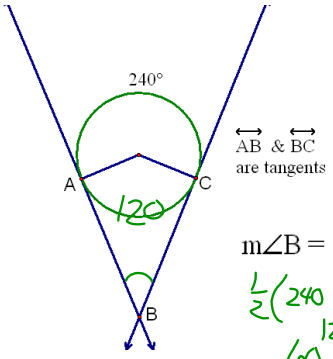
$56 = x$



180
−40
$m\angle 1 = 140°$

Add ∠2 to picture

$m\angle 2 = \frac{1}{2}(60+20)$
$= 40$

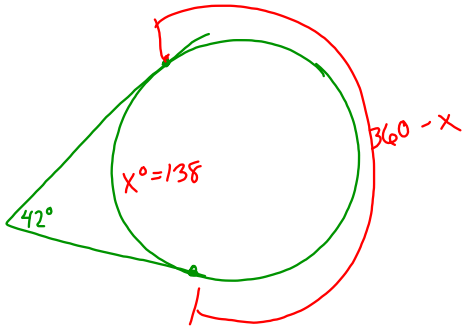


$m\angle B = 60°$

$\frac{1}{2}(240-120)$
120
60

Fill in the missing arc.

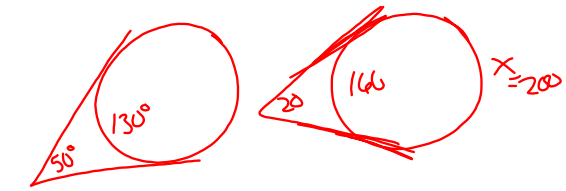
360
−240
120



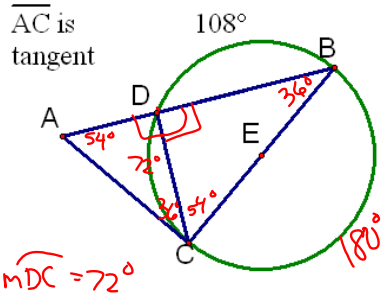
$42 = \frac{1}{2}(360 - x - x)$
$\frac{1}{2}(360-2x)$

$42 = 180 - x$

$138° = x$



* ∠ formed by 2 tangents is suppl. to the closer arc



$\overset{\frown}{DC} = 72°$

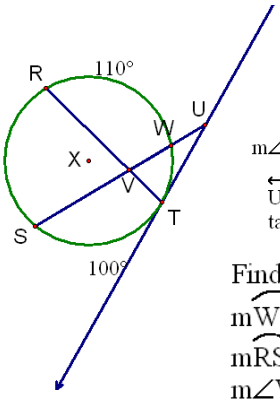
$m\angle BDC = 90°$

$m\angle DCB = 54°$

$m\angle DCA = 36°$

$m\angle A = \frac{1}{2}(180 - 72)$

$54° \quad 108$



$m\angle WUT = 30°$

$\overleftrightarrow{UT}$ IS tangent

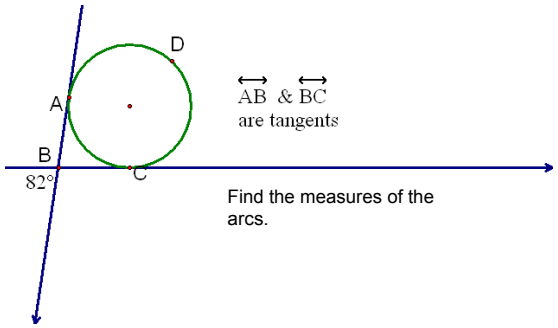
Find

$m\overset{\frown}{WT}$

$m\overset{\frown}{RS}$

$m\angle WVT$

$m\angle RVW$



$\overleftrightarrow{AB}$ & $\overleftrightarrow{BC}$ are tangents

Find the measures of the arcs.

HW

p564-565 12-30

Attachments

10_6_gsp_example.gsp